

Date: Wednesday, 29/04/2009 8:36:31 AM
 User: Linda Lacelle

Process Sheet

Customer : CU-DAR001 Dart Helicopters Services	Drawing Name : 212 X-TUBE ,LOW STANDARD FWD
Job Number : 47581	
Estimate Number : 13217	
P.O. Number :	Part Number : D212664107TRN
This Issue : 29/04/2009 S.O. No. :	Drawing Number : D212-664-147 REV A
Prsht Rev. : NC	Project Number : N/A
First Issue : / / Type : CROSSTUBES	Drawing Revision : A
Previous Run :	Material :
Written By :	Due Date : 08/05/2009 Qty: 1 Um: Each
Checked & Approved By :	
Comment : Est Rev:A New Issue 08-03-06 DD Verified by:ec Est Rev B Removed polish 08.04.02 EC verified: DD	

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
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1.0	D6019128	Crosstube Material
-----	----------	--------------------



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Pick:

Qty Part number Description Batch

1 D6019-128 Crosstube ~~B296369~~ B29369

Check OD = 2.750"; ID = 2.125"

****Keep and Identify off -cuts with part # and Batch for cuffs*****

Q.m 09.04.30①

2.0	MORI SEIKI	MORI SEIKI CNC LATHE LARGE
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**Comment:** MORI SEIKI

1-Fill tube with sand & install plugs DT8534 on both ends as per Folio FA705

2-Turn first side as per Folio FA113

3-File down transition lines smooth.

Q.m 09.04.30①

3.0	QC1	INSPECT ALL DIM TO DIM SHEET
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**Comment:** INSPECT ALL DIM TO DIM SHEET

Q.m 09.04.30①

4.0	MORI SEIKI	MORI SEIKI CNC LATHE LARGE
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**Comment:** MORI SEIKI CNC LATHE LARGE

1-Turn second side as per Folio FA705

2-File down transition lines smooth.

3- Remove plugs and sand

Q.m 09.04.30①

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Wednesday, 29/04/2009 8:36:32 AM
User: Linda Lacelle

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 212 X-TUBE ,LOW STANDARD FWD

Job Number: 47581

Part Number: D212664107TRN

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

QC1

INSPECT ALL DIM TO DIM SHEET



Comment: INSPECT ALL DIM TO DIM SHEET

Q.M 09.04.30 (1)

6.0

QC8

SECOND CHECK



Comment: SECOND CHECK

ANM 9-5-1

(1)

7.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

ANM 9-5-1

(1)

8.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

IT 09-0901

9.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Identify and stock in kanban rack

Location:

X-TUBE CELL

ANM 9-5-1

(1)

10.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

09/05/01 [Signature]

Job Completion



mf
09-05-01

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order: 47581
Description: Crosstube Assembly (205/212/412 Low Fwd)		Part Number: D212-664-147
Inspection Dwg: D212-664-147 Rev: A		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article
 ☐ Prototype

	Inspection Sheet Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	0.313	+/-0.010	0.313	-			
	2.360	+0.005/-0.000	2.365	-			
	2.360	+0.005/-0.000	2.365	-			
	2.366	+0.005/-0.000	2.367	-			
	2.473	+0.005/-0.000	2.475	-			
	2.573	+0.005/-0.000	2.577	-			
	2.673	+0.005/-0.000	2.674	-			
	2.750	+0.005/-0.000	2.750	-			
	2.750	+0.005/-0.000	2.750	-			
SIDE B	0.313	+/-0.010	0.313	-			
	2.360	+0.005/-0.000	2.365	-			
	2.360	+0.005/-0.000	2.365	-			
	2.366	+0.005/-0.000	2.367	-			
	2.473	+0.005/-0.000	2.477	-			
	2.573	+0.005/-0.000	2.577	-			
	2.673	+0.005/-0.000	2.675	-			
	2.750	+0.005/-0.000	2.750	-			
	2.750	+0.005/-0.000	2.750	-			
	0.126.53	+/-0.020	126.550	-			

Measured by: a.m	Audited by: AWM	Prototype Approval:	N/A
Date: 09.04.20	Date: 9-5-1	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	08.11.07	New Issue (P/O D212-664-107)	KJ/EC	

PARTS LIST:

Qty	Part Number	Description
X	D212-664-147	CROSSTUBE ASSEMBLY (205/212/412 LOW FWD)
1	D6019-128	CROSSTUBE
2	D2893-1	SUPPORT
4	D3595-063-450	RUBBER CUSHION
2	D3659-1	CUFF
4	MS21920-25	CLAMP (OR MS21920-26)
44	CR3212-4-06	RIVET (OR M7885/3-4-06)
A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)
A/R	SIKAFLEX-241/-291	SEALANT (OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT)

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6019-128
FINISHED LENGTH = 126.53±0.020 (BEFORE BENDING/TRIMMING)
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) PART IS SYMMETRIC ABOUT CENTERLINE.
- 6) WHEN MACHINING TAPER, RUN-OFF PART AT STOCK. BLEND OUT EDGE LONGITUDINALLY.
TRANSITION SHOULD BE SMOOTH.
- 7) BEND PROGRESSIVELY WITH A MINIMUM OF 8 PASSES. MAXIMUM TUBE FLATTENING DUE
TO BENDING IS 6% BASED ON O.D., EXCEPT UP TO 10% IS ALLOWED IN AREA NOTED.
- 8) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 9) SCRIBE DART PART NUMBER AND BATCH NUMBER ON INNER SURFACE OF TUBE WITH A
VIBRATING STYLUS.
- 10) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE
OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS
SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT
LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 11) APPLY A 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 TO THE SURFACE OF D2893-1
THAT WILL BE IN CONTACT WITH THE CROSSTUBE. LET CURE FOR 12 HOURS AFTER
INSTALLATION AND PRIOR TO PACKAGING.
- 12) INSTALL MS21920-25 CLAMPS (OR -26) WITH D3595-063-450 RUBBER CUSHIONS TO SECURE
D2893-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE
CROSSTUBE SUPPORT.
- 13) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY
AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.
- 14) INSTALL D3659-1 CUFF AFTER CHEMICAL CONVERSION COAT BUT BEFORE PAINT, WITH A
LAYER OF SIKAFLEX-241/-291 OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT BETWEEN
CUFF AND CROSSTUBE. SEAL EDGE OF CUFF TO ENSURE NO GAPS.
- 15) TOUCH-UP HOLES WITH CHEMICAL CONVERSION COAT.

Handwritten: 1788

RELEASED
07 JAN 24

A		07.07.07	NEW ISSUE
DESIGN	qp	DRAWN BY	qp
CHECKED		APPROVED	
DATE		07.07.07	
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		D212-664-147	SHEET 1 OF 3
		TITLE	SCALE
		CROSSTUBE (205/212/412 LOW FWD)	NTS

Dart Aerospace Ltd

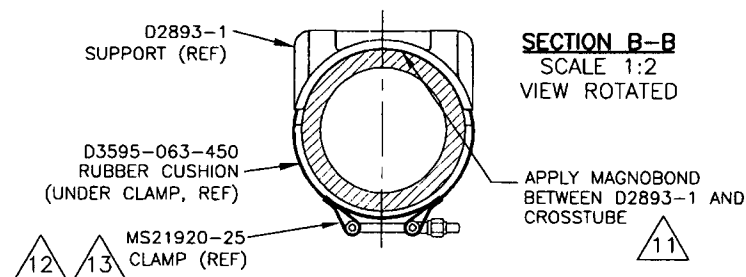
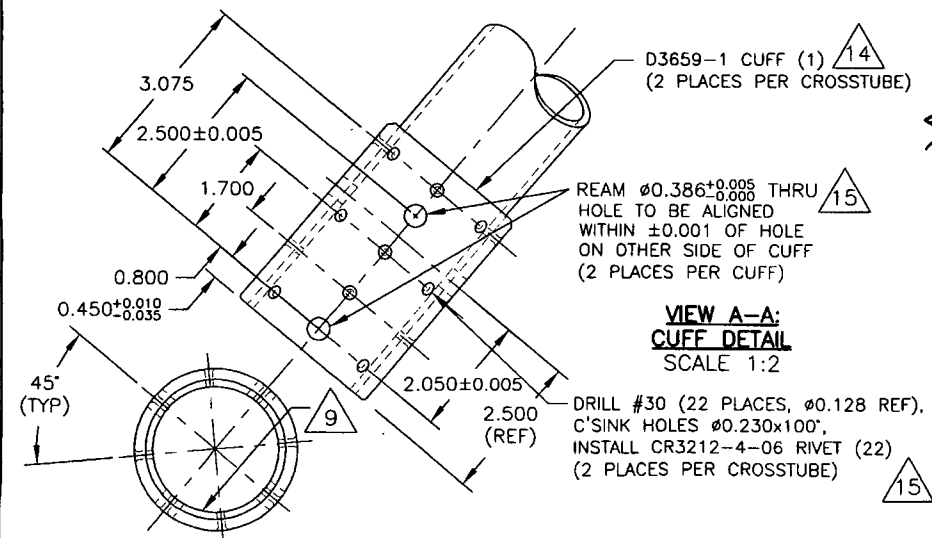
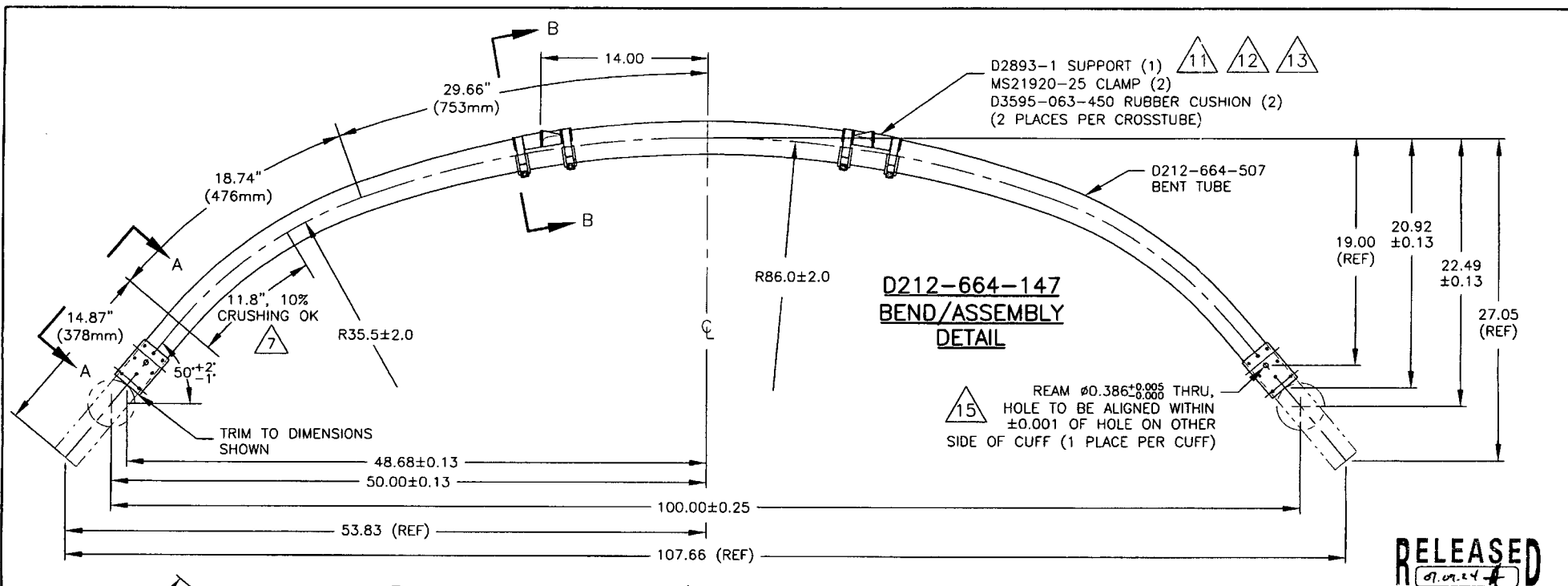
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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DATE 07.07.07		TITLE CROSSTUBE (205/212/412 LOW FWD)		SCALE 1:8	

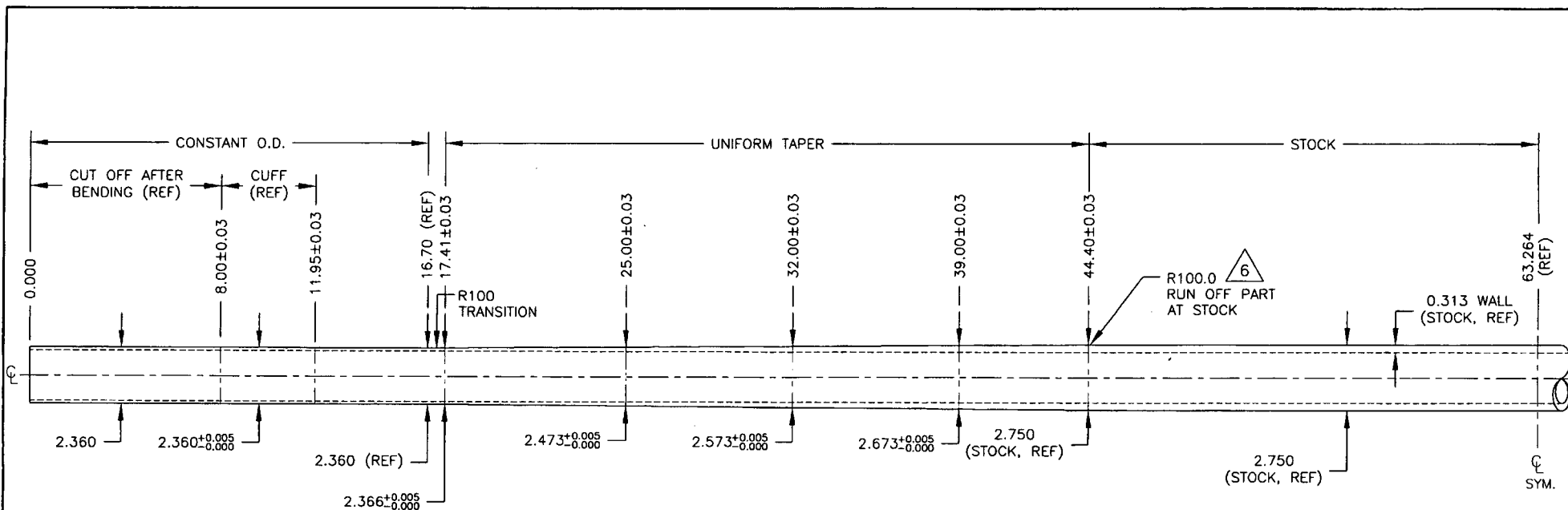
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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NOTE: Date & initial all entries



D212-664-147 MACHINING DETAIL

RELEASED
07.07.24

47581

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DATE 07.07.07		TITLE CROSSTUBE (205/212/412 LOW FWD) 1:4			